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## **CLAIMS**

- 1. A method of treating nerve damage comprising administering to a subject in need thereof an effective non-toxic amount of an MGF (mechano-growth factor) Insulin-like Growth Factor I (IGF-I) isoform comprising amino acid sequences encoded by nucleic acid sequences of IGF-I exons 4, 5 and 6 in the reading frame of MGF and having the ability to reduce motoneurone loss by 20% or greater in response to nerve avulsion, by localisation of said MGF at the site of said damage.
- 2. A method of claim 1 wherein said nerve damage is to a nerve of the peripheral nervous system (PNS).
- 3. A method of claim 1 wherein said MGF is localised at said site of the damage by means of a conduit placed around the nerve at said site of said damage:
- 4. A method of claim 3 wherein said conduit comprises Poly-3-hydroxy-butyrate (PHB).
- 5. A method of claim 1 wherein said damage comprises the severing of the nerve
- 6. A method of claim 2 wherein said treatment of said nerve damage is combined with a treatment that prevents or diminishes degeneration of the target organ which the damaged nerve innervates.
- A method of claim 6 wherein said target organ is a muscle and treatment of the muscle with MGF or a polynucleotide encoding MGF prevents or diminishes degeneration.

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- 8. A method of claim 6 wherein treatment of the target organ with a polypeptide growth factor than than MGF prevents or diminishes degeneration.
- 9 A method of claim 1 wherein said MGF has the ability to reduce motoneurone loss by 50% or greater or 80% or greater in response to nerve avulsion
- 10. A method of claim 1 wherein said MGF is unglycosylated
- 11. A method of claim 1 wherein said MGF has:
  - (a) the sequence of Human MGF (SEQ ID NO. 2, Rat MGF (SEQ ID NO. 4) or Rabbit MGF (SEQ ID NO. 6),
  - (b) a sequence having 70% or greater homology to a sequence of (a);
  - (c) a sequence comprising the amino acids encoded wholly or partly by
     exons 4, 5 and 6 of human, rat or rabbit MGF DNA of SEQ ID NO. 1,
     3 or 5, or a sequence having 70% or greater homology thereto; or
  - (d) a sequence encoded by a nucleic acid sequence capable of selectively hybridising to a sequence of (a), (b) or (c).
- A method of claim 1, further comprising treatment with another neurologically active agent MGF is carried out in combination with said MGF.
- 13. A kit for the treatment of nerve damage comprising:
  - (a) an MGF IGF-I isoform;
  - (b) a conduit adapted to be placed around a damaged nerve of the site of said damage;
  - (c) a further polypeptide growth factor which prevents or diminishes degeneration; and optionally
  - (d) another neurologically active agent.

-40-

## SEQUENCE LISTING

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